

Unseen Machine

Unseen Machine is our first game. It is a cooperative stealth game where up to four players jump into the role of robot agents. The players are teleported into randomly generated dungeons where they have to evade enemies, steal everything in sight and escape unseen.

 Robot agent in action

► [Game Design Document](#)

Game Design Document

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Disclaimer

The player will be referred to as 'they' throughout this document, regardless of gender identity.

Overview

Unseen Machine is a cooperative stealth-action game in which up to four players jump into the role of robotic burglars. Their goal is to explore randomly generated dungeons, extract valuable artifacts and escape unseen. On the way to the objective the players must avoid robotic guards and steal everything that isn't nailed to the walls.

Unseen Machine focuses on fast paced gameplay, placing high speed evasive movement over slow and methodic sneaking. Each player can customize their robot with different looks and abilities to overcome gameplay challenges in different ways.

Look and Feel

Unseen Machine is set in a retro-futuristic setting, combining clean scifi aesthetics with crt-monitors and cassette tapes.

The player sees this world from a first person perspective, for immersive and tense gameplay.

Gameplay loop

The player starts out in their lobby. The lobby, allows other players to join the hosts session.

Playtime

Since each level is randomly generated Unseen Machine offers a great degree of replayability. The player will spend between 5 to 20 minutes for one mission, depending on the generated mission's size and complexity. To keep the player engaged and offer a longtime motivation, the player will experience [Meta Progression](#) in-between the actual missions. Ideally this will make the player come back to the game regularly to unlock and play new content.

Meta Progression

Completing a mission will reward the player with currency, depending on the mission difficulty and the score reached. The player can then spend the currency in the base for permanent unlocks. The player can unlock new gameplay features and visuals for their character.

Prototype

Main Menu

Lobby

After pressing the host or join button the player is brought into their own lobby or the lobby of the host they connected to, respectively. The Lobby has is split into four areas:

- The spawning area
- The mission area
- The training area
- The social area

Spawning Area

The spawning area consists of 4 personal pods, one for each player and the docks they connect. When a new player connects they will spawn in their personal pod.

Mission Area

In the mission area the players can [customize their character](#) and [select and start missions](#). In the middle of the area is the mission slection terminal, interacting with it opens the mission selection menu. Once a mission is selected all connected players have to move to the ready area. Once all players are in the ready area the mission starts. Before starting a mission the players can adjust their gear and appearance at the respective terminal.

Mission Selection

Interacting with the mission selection terminal opens the mission selection menu. Every 30 minutes the mission selection menu generates a set of randomly generated missions. The missions are displayed with information about their complexity and size. Aside from these missions the player can always choose to play the tutorial mission.

Mission Ready

Once a player selects a mission the ready area opens up. Once all players are inside the ready area the lobby area is unloaded and the mission assets are generated.

Gear Terminal

At the gear area the player can choose different abilities

Appearance Terminal

At the appearance terminal the player can choose different skins and paint jobs for their robot.

Interacting with other Players

Training and Social Area

The training and social area are optional areas of the lobby the players can use to try out their gear, spend time waiting for other players to join or to relax inbetween missions. The training area has a practice dummy and parkour elements. The social area has a jukebox that allows players to listen to the games soundtrack.

Mission Generation and Design

To generate the missions Unseen Machine uses a complex mix of procedural generation techniques. The generator differentiates between rooms and corridors. Rooms are predesigned assets with random elements. The generator creates a set of random rooms, including necessary rooms, such as the spawn, the extraction zone and the room(s) required for the mission objective. These rooms are then randomly distributed in 3d space. The generator then executes the following steps to ensure that all rooms are connected to each other, directly or indirectly.

- Delauney Triangulation: The generator creates an edge between all rooms, so that all connections form triangles that have no other rooms within the triangle.
- Min-Spanning Tree: The generator chooses a subset of the Delauney edges, so that all rooms are connected with a minimal amount of edges.
- Adding back random edges: The generator adds back random edges to create secondary connections.
- Corridor connection: The generator uses a grid and a modified A-Star algorithm to assign corridor attributes to the grid's elements.
- Corridor generation: Depending on it's attributes and neighbours each corridor element then generates the required walls, floor, stairs, etc. Then each room is randomized to a degree. Each room has elements that are randomly chosen based on a given set of allowed elements. This mix of generation techniques allows for unique but coherent levels.

Tutorial Mission

The tutorial mission is not randomly generated but offers different challenges that allow the player to test out all of the games mechanics in a controlled environment.

Game Mechanics

Movement

Unseen Engine offers a variety of movement mechanics to allow for quick, smooth traversal of the environment. the game uses regular first person movement mechanics, allowing the player to walk, sprint, crouch, slide, jump, wallslide and walljump.

sprinting

Holding down the shift-key on the keyboard increases the speed the player moves at.

crouching

Holding down the c-key the player enters a crouched state. While crouched the players size, [visibility](#) and speed are reduced. Releasing the c-key returns the player from the crouched state as soon as the player has enough vertical room to stand up.

sliding

If the player enters the crouch state while sprinting, they start sliding. While sliding the player moves at increased speed at a loss of steerability. The players speed decreases steadily until the player is at crouching speed, at which point the player starts to crouch normally. While sliding the players' [visibility](#) is decreased.

jumping

Using the space bar the player jumps into the air. The player can press the space bar again to perform a double jump. The player then has to touch the floor or perform a [wallslide](#) in order to regain the ability to jump.

wallslide

If a jump ends touching a wall, the player slowly slides down the wall.

walljump

If the player presses space while wallsliding they jump of the wall.

Interaction

Looking at an interactable object, the player can press the interaction-button. The interaction function of the object is the executed.

Visiblity

Combat

Player Character Design

Enemy Design

Visual Design

Sound Design

Networking

Unseen Machine relies on peer-to-peer networking. This eliminates the need for a server architecture.

However players need to share a local network, or have the be connected over a third party service such as [Steam's peer-to-peer networking](#).

► Presentation